

TECHNICAL SUBMITTAL FOR

FIRE PUMP SET

(ELECTRIC +DIESEL + JOCKEY)
(CAPACITY: **1000** GPM @ **12** BARs)
(TYPE: END SUCTION)

SUBMITTED Brand

KSB Water Pumps Germany





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1. GENERAL DESCRIPTION (END SUCTION PUMPS)

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6. JOCKEY PUMP

7. FIRE PUMP CONTROLLERS

8. ACCESSORIES



CHAPTER – 1

GENERAL DESCRIPTION

1000 GPM Electric, Jockey, and Diesel pump at 12 bar

Description:

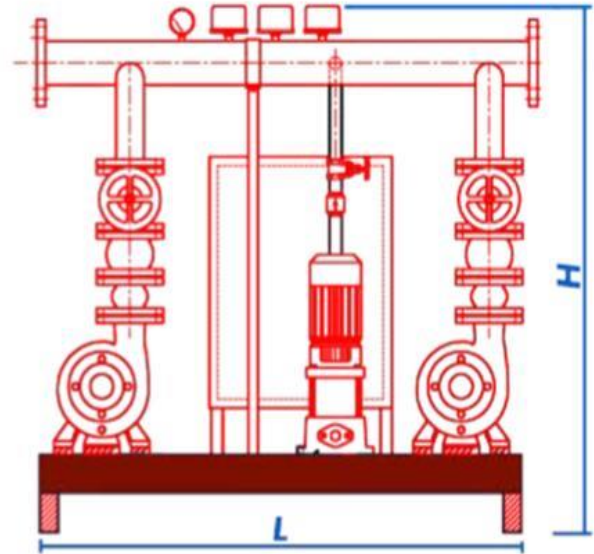
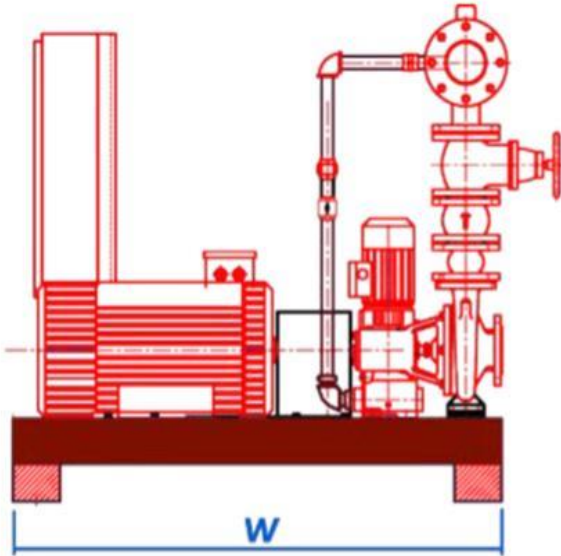
The 1000 GPM (EJD) @ 12 bar fire pump is a packaged type fire pump consisting of an Electric motor driven by duty pump, Diesel engine driven by standby pump, Jockey pump, and controller/s in a common plate.

Nominal performance rating is 500 GPM @ 8 BAR.

The package is completed with suction and discharge line, valves, accessories, pressure switches pressure gauge and steel.

Diesel Set (Standby)		
	PUMP	Brand : KSB Germany Model : 100-315 Type : Horizontal - End Suction - Centrifugal Pump
Diesel Set (Standby)	Diesel Engine	BRAND: TD POWER ENGINE Model: 4100 Power : 125 HP RPM : 3000, Water Cooled
Jockey Pump		Brand KSB Holland Model : Movetic VF10-10 Power : 10 HP Type : Vertical Multi-stage
Controller		Combined Automatic and Manual
Electric Set (Duty)	PUMP	Brand : KSB Germany Model :80-250 Type : Horizontal – End Suction - Centrifugal Pump
	Electric Motor	BRAND: MOTOR Model: IE3-200L2-2 Power : 125 HP RPM : 3500, 220-380 volts

PUMP SKID SPECIFICATIONS



type	GPM	W (MM)	H (MM)	L (MM)	MOTOR (HP)	DIESEL (HP)	JOCKEY (HP)	KG	HEADERPIPE
EDJ	1500	2300	1600	2450	150	150	15	1800	8"
EDJ	1250	2300	1600	2350	125	125	12	1700	8"
EDJ	1000	2100	1450	2250	100	100	10	1500	6"/8"
EDJ	750	1900	1400	2250	75	75	7.5	1300	6"
EDJ	500	1650	1750	1650	50	46	5.5	1200	6"
EDJ	350	1500	1350	1650	30	36	3	950	4"
EDJ	300	1500	1350	1650	30	28	3	950	4"
EDJ	250	1450	1350	1650	25	28	3	900	4"
EDJ	120/150	1250	1300	1300	12/15	10/15	3	800	2.5"OR 3"

NOTE: THESE ARE OUR STANDARD MODELES .OTHER SPECIFICATIONS ALSO AVAILABLE AS PER CUSTOMER REQUEST



CHAPTER -2

ELECTRIC PUMP

Technical Datasheet

Electric Pump

Model	:	Etanorm EN 80-250
Type	:	Horizontal End Suction
Rated Flow	:	1000 GPM
Rated Head	:	12 Bar
Impeller Size	:	Ø200 mm
Suction / Discharge	:	Ø100/ Ø80
Rated Speed	:	3500 RPM
Casing	:	Cast Iron
Impeller Material	:	Cast Iron
Shaft	:	Stainless Steel

Data sheet



Customer item no.:
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ETN 80-250

Version no.:

Centrifugal pump Etanorm

Operating data

Requested flow rate	226.00 m ³ /h	Actual flow rate	226.00 m ³ /h
Requested developed head	120.00 m	Actual developed head	120.00 m
Pumped medium	Water	Efficiency	80.8 %
	Clean water	MEI (Minimum Efficiency Index)	≥ 0.70
Pumped medium details	Not containing chemical and mechanical substances which affect the materials	Power absorbed	91.26 kW
		Pump speed of rotation	3584 rpm
Max. ambient air temperature	20.0 °C	NPSH required	7.67 m
Min. ambient air temperature	20.0 °C	Permissible operating pressure	16.00 bar.g
Fluid temperature	20.0 °C		
Fluid density	998 kg/m ³	Discharge press.	11.74 bar.g
Fluid viscosity	1.00 mm ² /s	Shutoff head	136.15 m
Suction pressure max.	0.00 bar.g	Min. allow. flow for continuous stable operation	37.13 m ³ /h
Mass flow rate	62.65 kg/s	Min. allow. mass flow for continuous stable operation	10.29 kg/s
Max. power on curve	106.93 kW	Design	Single system 1 x 100 % tolerances to ISO 9906 class 3B
Max. allow. mass flow	87.02 kg/s		

Design

Pump standard	EN 733	Material code	BQ1EGG-WA
Design	Baseplate mounted, long-coupled	Shaft seal code	11
		Sealing plan	A Single-acting mechanical seal (A-type casing cover, taper bore)
Orientation	Horizontal	A liquid free of solids is assumed	
Suction nominal dia.	DN 100	Seal chamber design	Conical seal chamber (A-type cover)
Suction nominal pressure	PN 16	Contact guard	With
Suction position	axial	Wear ring	Casing wear ring
Suction flange dimension according to standard	EN1092-2	Impeller diameter	252.0 mm
Suction flange drilled according to standard	EN1092-2	Free passage size	15.8 mm
Discharge nominal dia.	DN 80	Silicon free pump assembly	Yes
Discharge nominal pressure	PN 16	Bearing bracket construction	Water standard standard
Discharge position	top (0°/360°)	Bearing bracket size	35
Discharge flange dimension according to standard	EN1092-2	Bearing seal	V ring
Discharge flange drilled according to standard	EN1092-2	Bearing type	Anti-friction bearings
Surface type	Raised face (form B to EN 1092)	Lubrication type	Grease
		Color	Ultramarine blue (RAL 5002) KSB-blue
Shaft seal	Single acting mechanical seal		
Shaft seal manufacturer	KSB		
Shaft seal type	1		

Performance curve

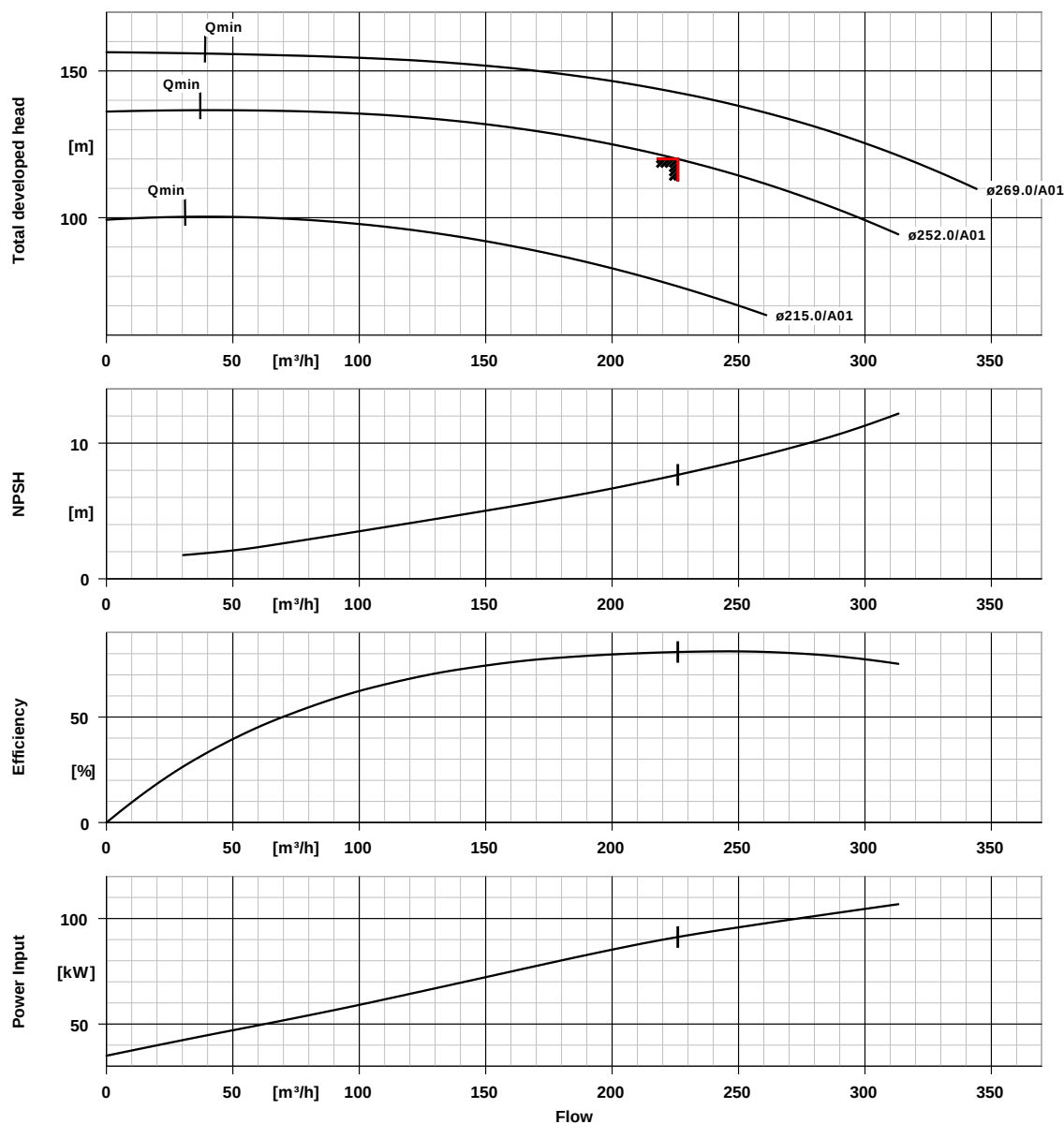


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ETN 80-250
Centrifugal pump Etanorm

Version no.:



Curve data

Speed of rotation 3584 rpm
Fluid density 998 kg/m^3
Viscosity 1.00 mm^2/s
Flow rate 226.00 m^3/h
Requested flow rate 226.00 m^3/h
Total developed head 120.00 m
Requested developed head 120.00 m

Efficiency 80.8 %
MEI (Minimum Efficiency Index) ≥ 0.70
Power absorbed 91.26 kW
NPSHR 7.67 m
Curve number K1311.462/42
Effective impeller diameter 252.0 mm

Installation plan



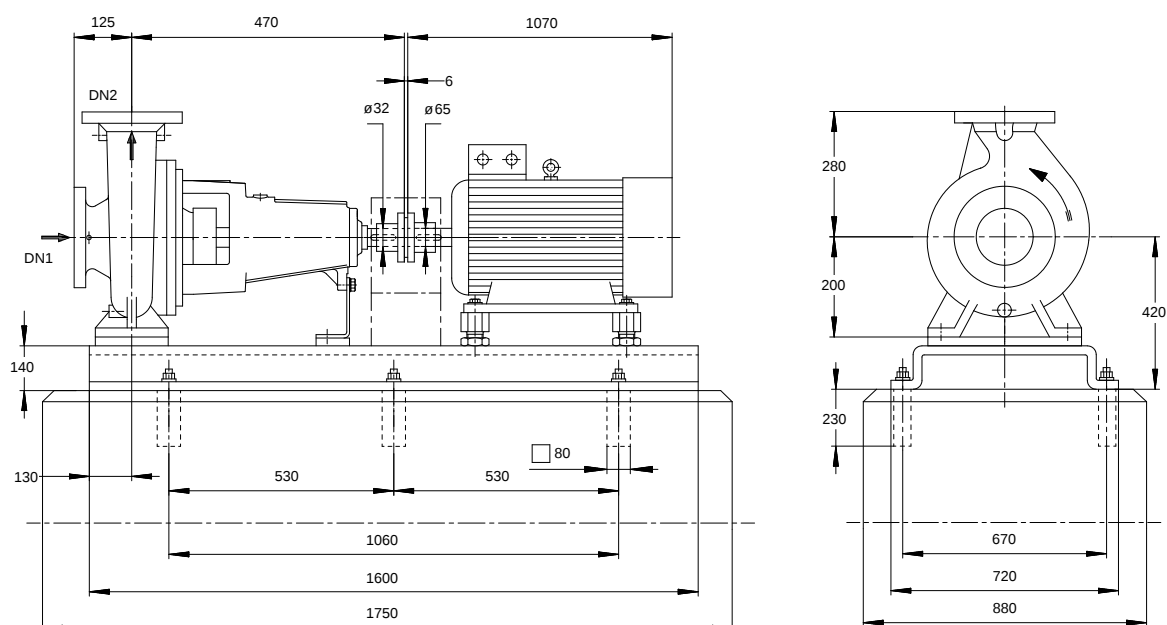
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ETN 80-250

Version no.:

Centrifugal pump Etanorm



Drawing is not to scale

Dimensions in mm

Motor

Motor manufacturer	Motor
Motor size	280M
Motor power	101.00 kW
Number of poles	2
Speed of rotation	3584 rpm
Position of terminal box	0°/360° (top)
	Viewed towards the suction nozzle

Baseplate

Design	U-beam / folded plate
Size	11B
Material	Steel ST
Leakage drain baseplate (8B)	Rp1, Without
Baseplate drain piping execution	Without
Foundation bolts	M20x250 (required but not scope of supply)

Connections

Suction nominal size DN1	DN 100 / EN1092-2
Discharge nominal size DN2	DN 80 / EN1092-2
Nominal pressure suct.	PN 16
Rated pressure disch.	PN 16

Coupling

Coupling manufacturer	Flender
Coupling type	Eupex N
Coupling size	160
Spacer	0.0 mm

Weight net

Pump	87 kg
Baseplate	118 kg
Coupling	10 kg
Coupling guard	2 kg
Motor	610 kg
Total	827 kg

Connect pipes without stress or strain!

For auxiliary connections see separate drawing.



CHAPTER -3

ELECTRIC MOTOR

Technical Datasheet

Electric Motor

Make	:	<i>China</i>
Model	:	IE3-200L2-2
Rated Power	:	125 HP
Rated Speed	:	3500 RPM
Power Supply	:	Y-D 380V , 60Hz , 3 Phase
Rated Current	:	187.5 A
Efficiency	:	92%
Rated Torque	:	91.5 Nm



Clean



Civil

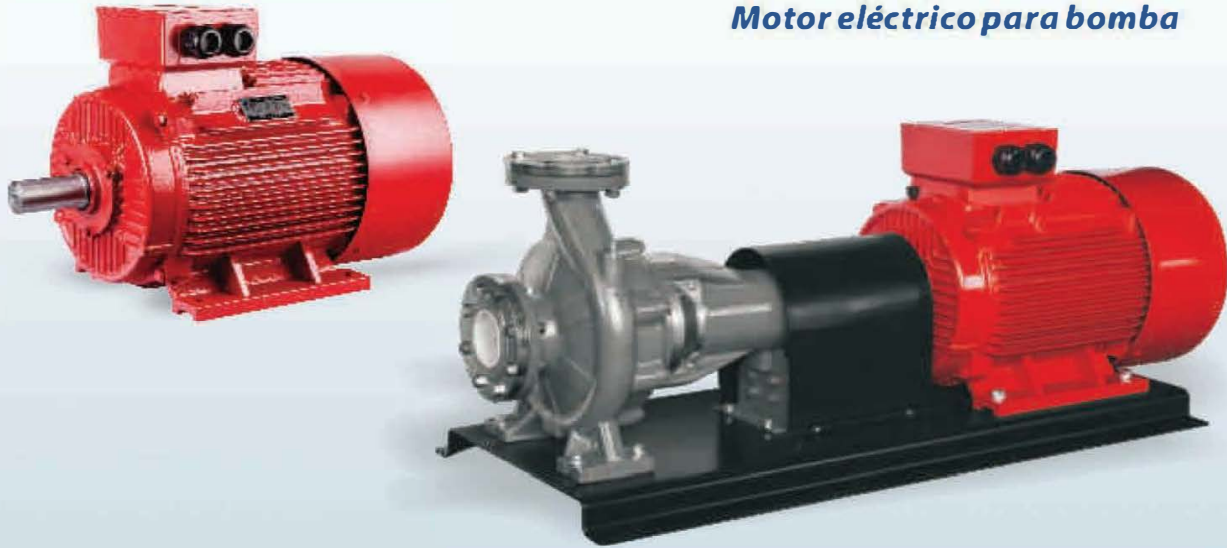


Industry

YE3

Electric motor for pump

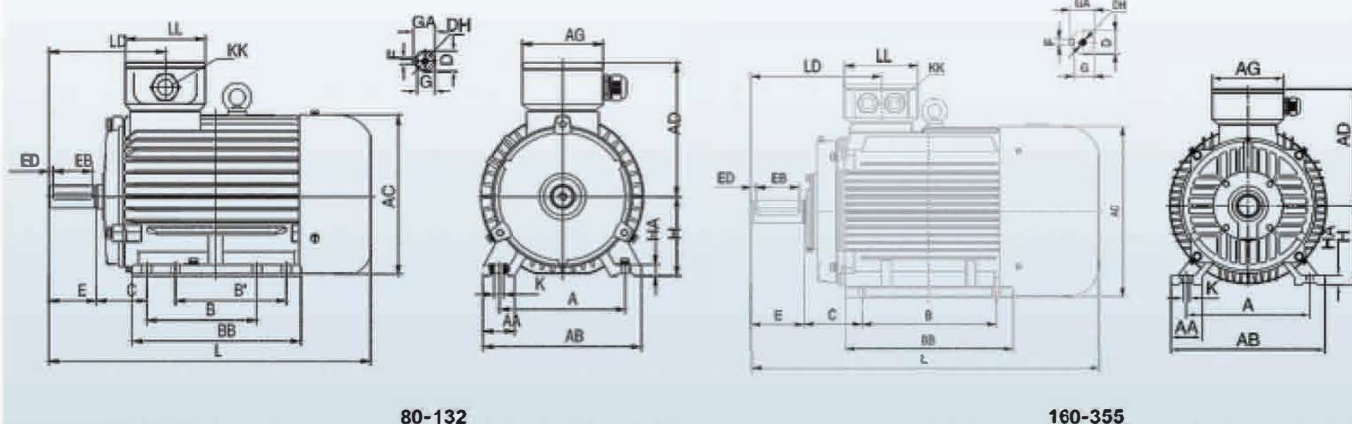
Motor eléctrico para bomba



TECHNICAL DATA / DATOS TÉCNICOS

MODEL MODELO	Power Potencia		rpm	$\eta\%$	$\eta\%$ at 75%	$\eta\%$ at 50%	$\cos\phi$	A		Nm	Tmax/Tn	Ts/Tn	Is/n	kg
	kw	hp						220V	380V					
YE3-801-2	0.75	1	3500	80.7	80.7	79.1	0.82	3.6	1.83	2.49	2.3	2.3	7.0	18.1
YE3-802-2	1.1	1.5	3500	82.7	82.7	81.0	0.83	4.5	2.58	3.65	2.2	2.3	7.3	19.5
YE3-90S-2	1.5	2	3500	84.2	84.2	82.5	0.84	6.8	3.43	4.95	2.2	2.3	7.6	23.3
YE3-90L-2	2.2	3	3500	85.9	85.9	84.2	0.85	9.6	4.85	7.26	2.2	2.3	7.6	27.1
YE3-100L-2	3	4	3500	87.1	87.1	85.4	0.87	11.5	6.31	9.90	2.2	2.3	7.8	38.8
YE3-112M-2	4	5.5	3500	88.1	88.1	86.3	0.88	14.5	8.1	13.1	2.2	2.3	8.3	48.3
YE3-132S1-2	5.5	7.5	3500	89.2	89.2	87.4	0.88	22	11	17.9	2.0	2.3	8.3	55.1
YE3-132S-2	7.5	10	3500	90.1	90.1	88.3	0.88	28	14.9	24.4	2.0	2.3	7.9	69.2
YE3-160M1-2	11	15	3500	91.2	91.2	89.4	0.89	42	21.3	35.7	2.0	2.3	8.1	113
YE3-160M2-2	15	20	3500	91.9	91.9	90.1	0.89	54	28.8	48.6	2.0	2.3	8.1	123
YE3-160L-2	18.5	25	3500	92.4	92.4	90.6	0.89	68	34.7	60.1	2.0	2.3	8.2	142
YE3-180M-2	22	30	3500	92.7	92.7	90.8	0.89	80	41	71.1	2.0	2.3	8.2	182
YE3-200L1-2	30	40	3500	93.3	93.3	91.4	0.89	104	55.5	96.8	2.0	2.3	7.6	246
YE3-200L2-2	37	50	3500	93.7	93.7	91.8	0.89	130	67.9	119.4	2.0	2.3	7.6	265
YE3-225M-2	45	60	3500	94.0	94.0	92.1	0.90	150	82.3	144.9	2.0	2.3	7.7	323
YE3-250M-2	55	75	3500	94.3	94.3	92.4	0.90	192	101	176.9	2.0	2.3	7.7	413
YE3-280S-2	75	100	3500	94.7	94.7	92.8	0.90	245	134	240.8	1.8	2.3	7.1	546
YE3-280M-2	90	125	3500	95.0	95.0	93.1	0.90	312	160	288.9	1.8	2.3	7.1	569
YE3-315S-2	110	150	3500	95.2	95.2	93.3	0.90	400	195	352.8	1.8	2.3	7.1	897
YE3-315M-2	132	180	3500	95.4	95.4	93.5	0.90	425	233	423.3	1.8	2.3	7.1	1029
YE3-315L1-2	160	220	3500	95.6	95.6	93.7	0.91	600	279	512.8	1.8	2.3	7.2	1067
YE3-315L2-2	200	270	3500	95.8	95.8	93.9	0.91	630	349	640.9	1.8	2.2	7.2	1194
YE3-355M-2	250	340	3500	95.8	95.8	93.9	0.91	800	436	800.6	1.6	2.2	7.2	1685
YE3-355L-2	315	430	3500	95.8	95.8	93.9	0.91	990	549	1009	1.6	2.2	7.2	1734

DIMENSIONS / DIMENSIONES



MODEL MODELO	DIMENSIONS / DIMENSIONES mm																							
	A	AA	AB	AC	AD	AG	B	BB	C	D	DH	E	EB	ED	F	G	GA	H	HA	K	KK	L	LD	LL
80	125	34	160	167	147	102	100	150	50	19	M6X16	40	30	2.5	6	15.5	21.5	80	10	4-Φ10	1-M25X1.5	304	119	102
90S	140	36	176	182.4	154.5	102	100	161	56	24	M8X19	50	40	5	8	20	27	90	12	4-Φ10	1-M25X1.5	336	143	102
90L	140	36	176	182.4	154.5	102	125	186	56	24	M8X19	50	40	5	8	20	27	90	12	4-Φ10	1-M25X1.5	361	143	102
100L	160	40	200	205.4	166	102	140	213	63	28	M10X22	60	50	5	8	24	31	100	14	4-Φ12	1-M32X1.5	406	147	102
112M	190	50	240	230	188	118	140	188	70	28	M10X22	60	50	5	8	24	31	112	15	4-Φ12	2-M32X1.5	394	147	110
132S	216	55	265	258.4	203	118	140	186	89	38	M12X28	80	65	5	10	33	41	132	18	4-Φ12	2-M32X1.5	438	172	110
132M	216	55	265	258.4	203	118	178	224	89	38	M12X28	80	65	7.5	10	33	41	132	18	4-Φ12	2-M32X1.5	476	172	110
160M	254	65	314	314	251	162	210	260	108	42	M16X36	110	90	7.5	12	37	45	160	20	4-Φ14.5	2-M40X1.5	608	256	152
160L	254	65	314	314	251	162	254	304	108	42	M16X36	110	90	10	12	37	45	160	20	4-Φ14.5	2-M40X1.5	652	256	152
180M	279	70	349	355	267	162	241	311	121	48	M16X36	110	90	10	14	42.5	51.5	180	22	4-Φ14.5	2-M40X1.5	688	271	152
180L	279	70	349	355	267	162	279	349	121	48	M16X36	110	90	10	14	42.5	51.5	180	22	4-Φ14.5	2-M40X1.5	726	271	152
200L	318	70	388	397	299	210	305	369	133	55	M20X42	110	100	10	16	49	59	200	25	4-Φ18.5	2-M50X1.5	779	296	190
225S	356	75	431	446	322	210	286	368	149	60	M20X42	140	125	5	18	53	64	225	28	4-Φ18.5	2-M50X1.5	824	329	190
225M	356	75	431	446	322	210	311	393	149	55	M20X42	110	100	7.5	16	49	59	225	28	4-Φ18.5	2-M50X1.5	819	299	190
250M	406	80	484	485	358	248	349	445	168	60	M20X42	140	125	7.5	18	53	64	250	30	4-Φ24	2-M63X1.5	910	347	218
280S	457	85	542	547	387	248	368	485	190	65	M20X42	140	125	7.5	18	58	69	280	35	4-Φ24	2-M63X1.5	982	355.5	218
280M	457	85	542	547	387	248	419	536	190	65	M20X42	140	125	7.5	18	58	69	280	35	4-Φ24	2-M63X1.5	1033	355.5	218
315S	508	120	628	620	527	320	406	570	216	65	M20X42	140	125	7.5	18	58	69	315	45	4-Φ28	2-M63X1.5	1194	397	280
315M	508	120	628	620	527	320	457	680	216	65	M20X42	140	125	7.5	18	58	69	315	45	4-Φ28	2-M63X1.5	1304	397	280
315L	508	120	628	620	527	320	508	680	216	65	M20X42	140	125	7.5	18	58	69	315	45	4-Φ28	2-M63X1.5	1304	397	280
355M	610	116	726	698	642	380	560	750	254	75	M20X42	140	130	5	20	67.5	79.5	355	52	6-Φ28	2-M63X1.5	1486	414	330
355L	610	116	726	698	642	380	630	750	254	75	M20X42	140	130	5	20	67.5	79.5	355	52	6-Φ28	2-M63X1.5	1486	414	330



CHAPTER -4

DIESEL PUMP

Technical Datasheet

Diesel Pump

MODEL	:	<i>Etanorm EN100-315</i>
Type	:	End Suction
Rated Flow	:	1000 GPM
Rated Head	:	12 Bar
Impeller Size	:	Ø250 mm
Suction / Discharge	:	Ø125/ Ø100
Rated Speed	:	3000 RPM
Casing	:	Cast Iron
Impeller Material	:	Cast Iron
Shaft	:	Stainless Steel

Data sheet



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ETN 125-100-315

Version no.:

Centrifugal pump Etanorm

Operating data

Requested flow rate	226.00 m ³ /h	Actual flow rate	226.01 m ³ /h
Requested developed head	120.00 m	Actual developed head	120.01 m
Pumped medium	Water	Efficiency	76.8 %
	Clean water	MEI (Minimum Efficiency Index)	≥ 0.70
Pumped medium details	Not containing chemical and mechanical substances which affect the materials	Power absorbed	96.05 kW
		Pump speed of rotation	2991 rpm
Max. ambient air temperature	20.0 °C	NPSH required	4.34 m
Min. ambient air temperature	20.0 °C	Permissible operating pressure	16.00 bar.g
Fluid temperature	20.0 °C		
Fluid density	998 kg/m ³	Discharge press.	11.75 bar.g
Fluid viscosity	1.00 mm ² /s	Shutoff head	130.88 m
Suction pressure max.	0.00 bar.g	Min. allow. flow for continuous stable operation	51.06 m ³ /h
Mass flow rate	62.66 kg/s	Min. allow. mass flow for continuous stable operation	14.15 kg/s
Max. power on curve	132.51 kW	Design	Single system 1 x 100 % tolerances to ISO 9906 class 3B
Max. allow. mass flow	115.88 kg/s		

Design

Pump standard	EN 733	Material code	BQ1EGG-WA
Design	Baseplate mounted, long-coupled	Shaft seal code	11
		Sealing plan	A Single-acting mechanical seal (A-type casing cover, taper bore)
Orientation	Horizontal	A liquid free of solids is assumed	
Suction nominal dia.	DN 125	Seal chamber design	Conical seal chamber (A-type cover)
Suction nominal pressure	PN 16	Contact guard	With
Suction position	axial	Wear ring	Casing wear ring
Suction flange dimension according to standard	EN1092-2	Impeller diameter	290.0 mm
Suction flange drilled according to standard	EN1092-2	Free passage size	19.9 mm
Discharge nominal dia.	DN 100	Silicon free pump assembly	Yes
Discharge nominal pressure	PN 16	Bearing bracket construction	Water standard reinforced
Discharge position	top (0°/360°)	Bearing bracket size	60
Discharge flange dimension according to standard	EN1092-2	Bearing seal	Flat gap
Discharge flange drilled according to standard	EN1092-2	Bearing type	Anti-friction bearings
Surface type	Raised face (form B to EN 1092)	Lubrication type	Grease
		Color	Ultramarine blue (RAL 5002) KSB-blue
Shaft seal	Single acting mechanical seal		
Shaft seal manufacturer	KSB		
Shaft seal type	1		

Performance curve

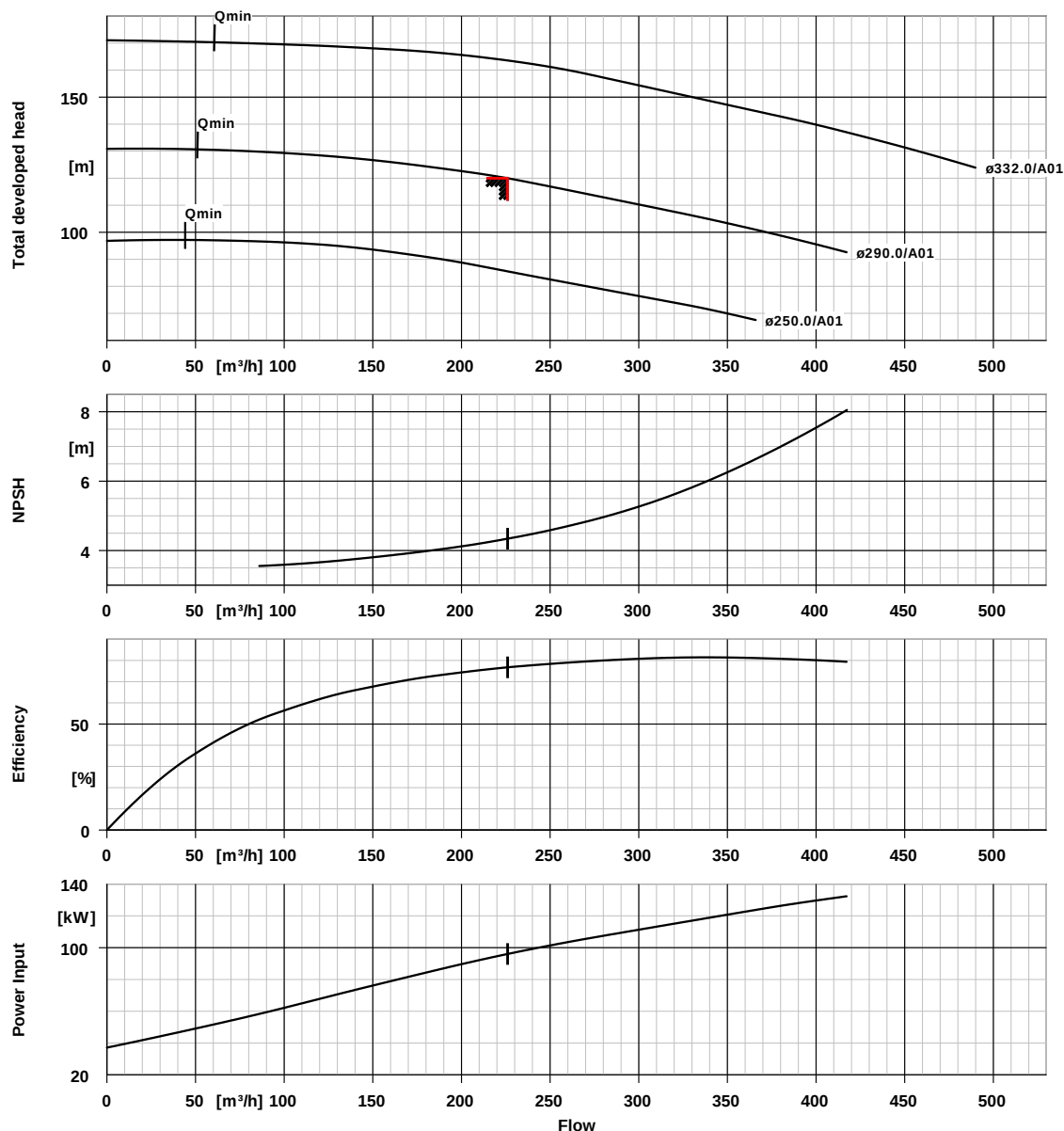


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ETN 125-100-315
Centrifugal pump Etanorm

Version no.:



Curve data

Speed of rotation 2991 rpm
Fluid density 998 kg/m³
Viscosity 1.00 mm²/s
Flow rate 226.01 m³/h
Requested flow rate 226.00 m³/h
Total developed head 120.01 m
Requested developed head 120.00 m

Efficiency 76.8 %
MEI (Minimum Efficiency Index) ≥ 0.70
Power absorbed 96.05 kW
NPSHR 4.34 m
Curve number K1311.452/48
Effective impeller diameter 290.0 mm

Connection plan

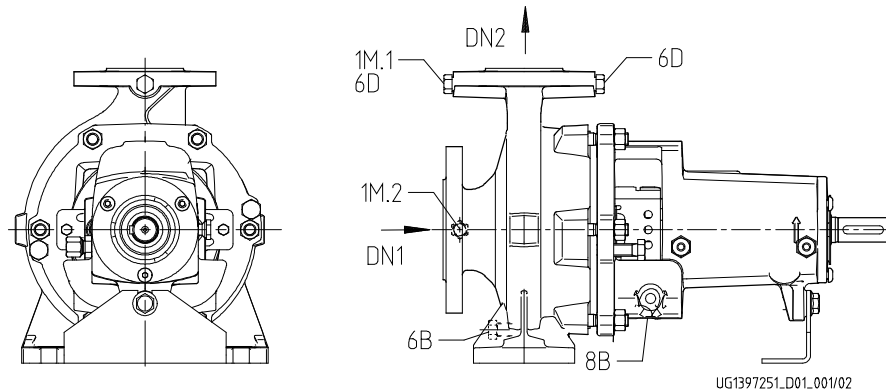


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ETN 100-315
Centrifugal pump Etanorm

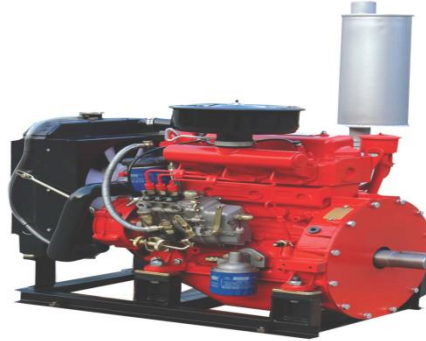
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Connections

Pump casing variant	
6B Pumped liquid drain	G 1/2
6D Pumped medium - filling / venting	G 1/2
8B Leakage drain	
1M.1 / 6D Pressure gauge or filling/venting connection	G 1/2
1M.2 Pressure gauge connection	G 1/2

XX48
Drilled and plugged.
Drilled and plugged.
Drilled
Pressure sensor for PumpMeter fitted
Pressure sensor for PumpMeter fitted



CHAPTER -5

DIESEL ENGINE

Technical Datasheet

Diesel Engine

Make	:	<i>TD POWER</i>
Model	:	4108
Rated Power	:	113 HP
Rated Speed	:	3000 RPM
No. of Cylinders	:	4
Cooling System	:	Vertical Water Cooling

Note:

Lube oil should be changed after 250 hours or 6 months whichever is earlier.

PD



Clean



Civil



Industry

Diesel engine for pump
Diesel para bomba



NEW / NUEVO

TECHNICAL DESCRIPTION / DESCRIPCIONES TÉCNICAS

-  ► More Environmentally Friendly
- Meeting China III Emission Standard
- Low Fuel Consumption
- Strong Power
- Easy To Assemble
-  ► Más Respetuoso Del Medio Ambiente
- Cumplir Con El Estándar De Emisión De China III
- Bajo Consumo De Combustible
- Gran Poder
- Fácil De Montar

APPLICATIONS / APLICACIONES

-  Suitable for use with clean water and liquids that are not chemically aggressive towards the materials from which the pump is made. The diesel engine pumps are recommended for use in water supply, cleaning sets, pressure boosting, firefighting sets, irrigation, industrial applications, water circulation in climatisation sets, agricultural.
 -  Son recomendadas para bombear agua limpia, sin partículas abrasivas y líquidos químicamente no agresivos con los materiales que constituyen la bomba.
- Las Bombas diesel según EN733 diseñadas para abastecimiento hídrico, instalaciones de lavado, presurización, contraincendio, irrigación, industria, circulación del agua, agricultura.*

USING LIMITS / LÍMITES DE UTILIZACIÓN

-  Liquid temperature between **-10°C** and **+120°C**
Ambient temperature up to **+50°C**
Max. working pressure **16 bar**
Continuous service **S1**
-  Temperatura del líquido de **-10 °C** hasta **+120 °C**
Temperatura ambiente hasta **+50 °C**
Presión máxima en el cuerpo de la bomba **16 bar**
Funcionamiento continuo **S1**

TECHNICAL DATA / DATOS TÉCNICOS

Model	178	186	188	192	380	385	480	485	490N	490	495
Type	Single-cylinder,4-stroke,air-cooled				Direct Injection, Water-cooling, Four Stroke						
Intake Type	Naturally Aspirated										
Bore*Stroke(mm*mm)	78*62	86*72	88*75	92*75	80*90	85*90	80*90	85*100	90*100	90*105	95*105
Cylinder No.	1	1	1	1	3	3	4	4	4	4	4
Displacement (L)	0.296	0.418	0.456	0.499	1.357	1.532	1.8	2.27	2.54	2.67	2.977
Rated Power/ Speed(kW/r/min)	3.7/3000 4.0/3600	5.7/3000 6.3/3600	6.6/3000 7.2/3600	7.5/3000 8.2/3600	20/3000	24/3000	28/3000	36/3000	42/3000	45/3000	50/3000
Horse Power	5.0/3000 5.5/3600	7.8/3000 8.6/3600	9.0/3000 10.0/3600	10.2/3000 12.0/3600	27	32	38	49	58	61	68
Power Coverage(kW)	≤11	≤11	≤11	≤11	≤37	≤37	≤37	≤55	≤55	≤55	≤75

Model	498	4102	4105	4108	485Z	490NZ	490Z	498Z	4102Z	4105Z	4108Z
Type	Direct Injection, Water-cooling, Four Stroke										
Intake Type	Naturally Aspirated				Turbo-charging						
Bore*Stroke(mm*mm)	98*105	102*118	105*118	108*118	85*100	90*100	90*105	98*105	102*118	105*118	108*118
Cylinder No.	4	4	4	4	4	4	4	4	4	4	4
Displacement (L)	3.168	3.857	4.087	4.324	2.27	2.54	2.67	3.168	3.857	4.087	4.324
Rated Power/ Speed(kW/r/min)	54/3000	62/3000	67/3000	73/3000	44/3000	50/3000	55/3000	60/3000	73/3000	75/3000	83/3000
Horse Power	73	85	91	99	60	68	75	81	99	102	113
Power Coverage(kW)	≤75	≤100	≤100	≤100	≤55	≤55	≤55	≤75	≤100	≤100	≤100



CHAPTER -6 **JOCKEY PUMP** **Technical Datasheet**

Jockey Pump

<u>Jockey Pump:</u>		
Make	:	<i>KSB Holland</i>
Model / Series	:	Movetic VF10-10
Type	:	Vertical Multi-stage
Rated Flow	:	50 GPM
Rated Head	:	12 Bar
Suction / Discharge	:	Ø50/ ø50
Rated Speed	:	3500 RPM, 60Hz
<u>Motor:</u>		
Type	:	<i>KSB</i>
Power Supply		220-380V, 60 Hz, 3 Phase
Rated Power		10 HP
Rated Speed		3500 RPM

High-pressure In-line Pump

Movitec

60 Hz

Type Series Booklet



Materials

Table 4: Overview of available materials

Part No.	Description	Design			
		V	VC	VS	LHS
10-6	Pump shroud	1.4301		1.4404	
101	Pump casing	1.4308	EN-GJL-250 ⁷⁾ / EN-GJS-400-15 ⁸⁾	1.4408	
108	Stage casing	1.4301 ⁹⁾ / 1.4308 ¹⁰⁾		1.4404 ⁹⁾ / 1.4408 ¹⁰⁾	
160	Discharge cover	1.4301 ⁹⁾ / 1.4308 ¹⁰⁾		1.4404 ⁹⁾ / 1.4408 ¹⁰⁾	
210	Shaft	1.4057		1.4460 / 1.4401 ¹¹⁾	
230	Impeller ¹²⁾	1.4301 ⁹⁾ / 1.4308 ¹⁰⁾		1.4404 ⁹⁾ / 1.4408 ¹⁰⁾	
341	Drive lantern	EN-GJL-250 ¹³⁾ / EN-GJS-400-15 ¹⁴⁾			
412	O-ring	EPDM-WRc / ACS	EPDM	FPM / HNBR	
525	Spacer sleeve	1.4301		1.4401	
529	Bearing sleeve	Tungsten carbide / aluminum oxide			
890	Baseplate	EN-GJS-400-15 / EN-GJL-250 / 1.4308 ¹⁵⁾	-	EN-GJS-400-15 / EN-GJL-250 / 1.4308 ¹⁵⁾	
905	Tie bolt	1.4057			
920	Nut	1.4301		1.4404	
932	Circlip	1.4571			

Table 5: Comparison of materials

EN	ASTM
EN-GJL-250	A48 Class 35 B
EN-GJS-400-15	A536 Grade 60-40-18
1.4057	SS 431 (UNS S43100)
1.4301	SS 304 (UNS S30400)
1.4308	Grade CF8 (J92600)
1.4401	SS 316 (UNS S31600)
1.4404	SS 316L (UNS S31603)
1.4408	Grade CF8M (UNS J92900)
1.4460	SS 329 (UNS S32900)
1.4571	SS 316 Ti (UNS S31635)

Coating and preservation

Table 6: Coating of pump components

Component	Coating
Stainless steel components	No additional coating
Movitec VC:	
Pump casing made of gray cast iron	Cataphoretic coating
Movitec V/VS:	
Slide flanges made of gray cast iron	Cataphoretic coating
Drive lantern made of gray cast iron	Powder coating

Product benefits

- Reliable: product-lubricated plain bearings made of tungsten carbide, cast pump foot, torsion-resistant pump shroud and confined O-rings
- Long service life due to corrosion-resistant hydraulic components made of stainless steel
- Easy to service: can be fitted with any standardized mechanical seal to EN 12756
- Various materials and connection options, extended temperature and pressure range

⁷⁾ Movitec 2B, 4B, 6B, 10B, 15B/C, 25B, 40B, 60B, 125B

⁸⁾ Movitec 90B

⁹⁾ Movitec 2B, 4B, 6B, 10B, 15B/C, 25B, 40B, 60B

¹⁰⁾ Movitec 90B, 125B

¹¹⁾ Movitec VS 2B, 4B up to 14 stages, 6B up to 12 stages, 10B, 15B/C up to 10 stages

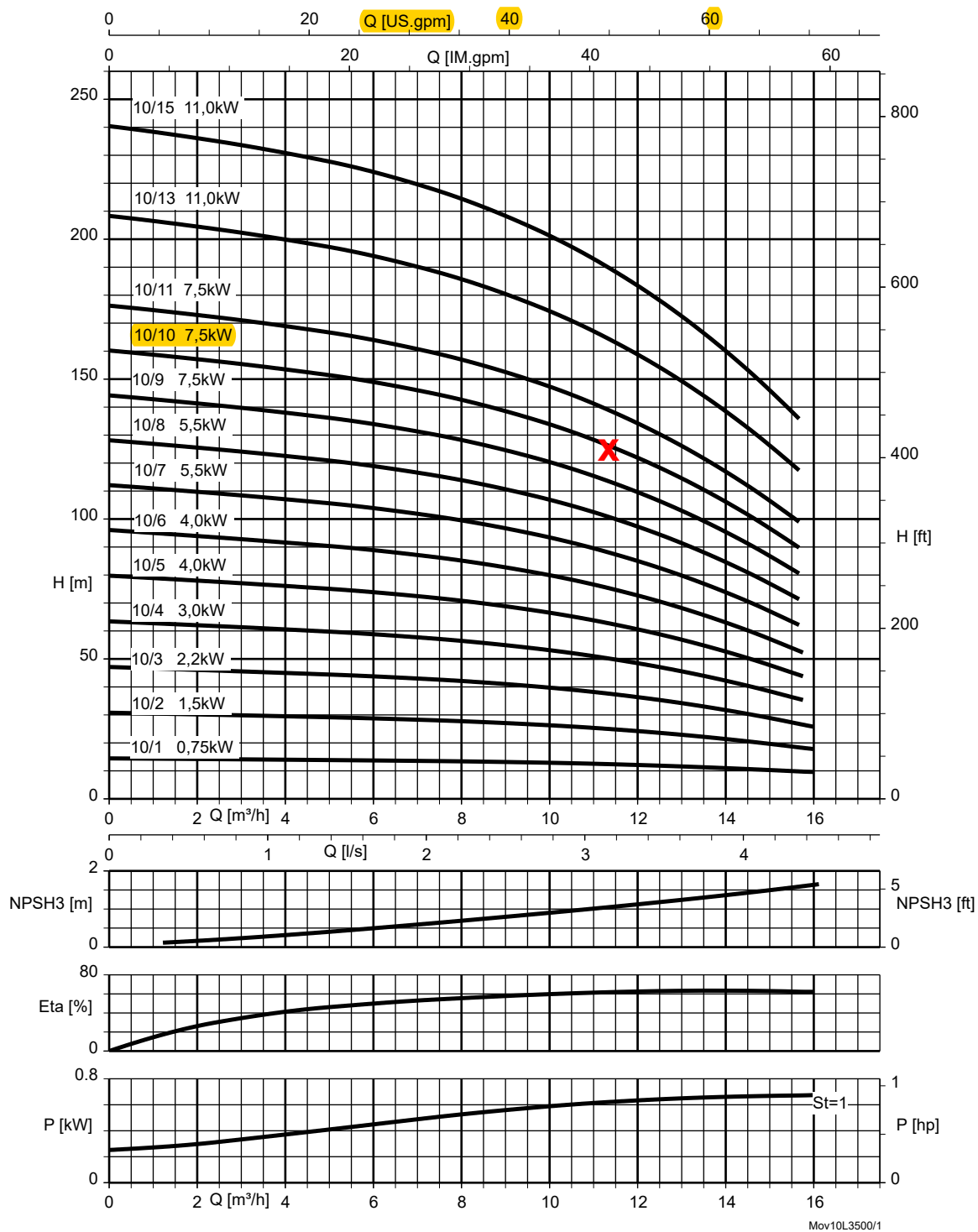
¹²⁾ The impellers of Movitec 125 are made of sheet metal and cast material.

¹³⁾ Movitec 2B, 4B, 6B, 10B, 15B/C, 25B (≤ 4 kW) and Movitec 90B

¹⁴⁾ Movitec 2B, 4B, 6B, 10B, 15B/C, 25B (≥ 5.5 kW) and Movitec 40B, 60B, 125B

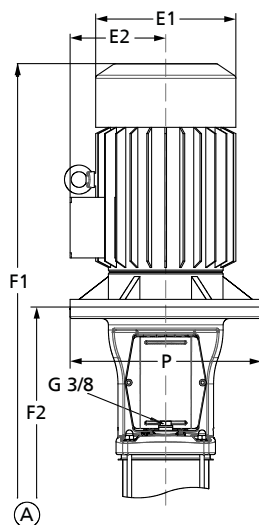
¹⁵⁾ Optional for: Movitec 2B, 4B, 6B, 10B, 15B/C

Movitec 10LB, n = 3500 rpm



St = 1 | P per stage

Movitec 10(L)B, n = 3500 rpm



V(S), V(S)V, V(S)T, V(C/S)F

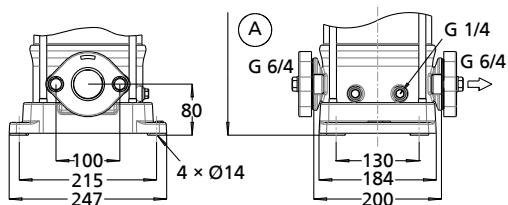


Fig. 27: Connections of Movitec V, VS

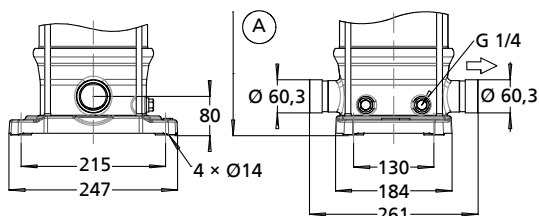


Fig. 28: Connections of Movitec VV, VSV

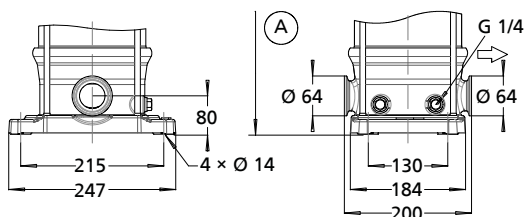


Fig. 29: Connections of Movitec VT, VST

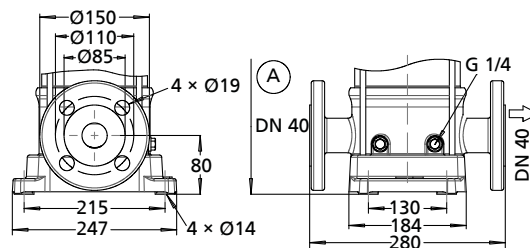


Fig. 30: Movitec VF, VSF – interchangeable range

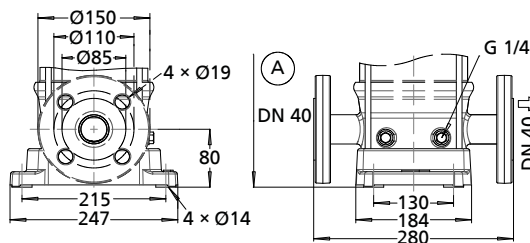


Fig. 31: Connections of Movitec VCF

Table 19: Dimensions

Number of stages	P _N [kW]	E1 [mm]	E2 [mm]	p [mm]	Movitec			
					V(S), VF ³⁶ , V(S)V, V(S)T		V(C/S)F	
					F1 [mm]	F2 [mm]	F1 [mm]	F2 [mm]
1	0,75	150	115	-	580	346	580	346
2	1,5	200	148	-	637	356	637	356
3	2,2	200	148	-	663	382	663	382
4	3,0	215	157	-	736	419	736	419
5	4,0	248	168	-	801	445	801	445
6	4,0	248	168	-	828	472	828	472
7	5,5	288	197	-	1010	578	1010	578
8	5,5	288	197	-	1036	604	1036	604
9	7,5	288	197	-	1063	631	1063	631
10	7,5	288	197	-	1089	657	1089	657
11	7,5	288	197	-	1116	684	1116	684
13	11,0	340	223	300	1300	767	1300	767
15	11,0	340	223	300	1353	820	1353	820

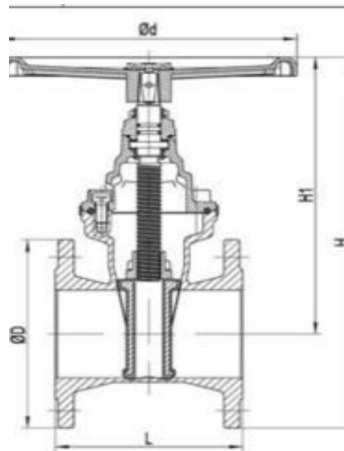
³⁶ Available with a maximum of 9 stages

CHAPTER- 8

ACCESSORIES

DIN F4 Resilient seated NRS gate valve-flange end

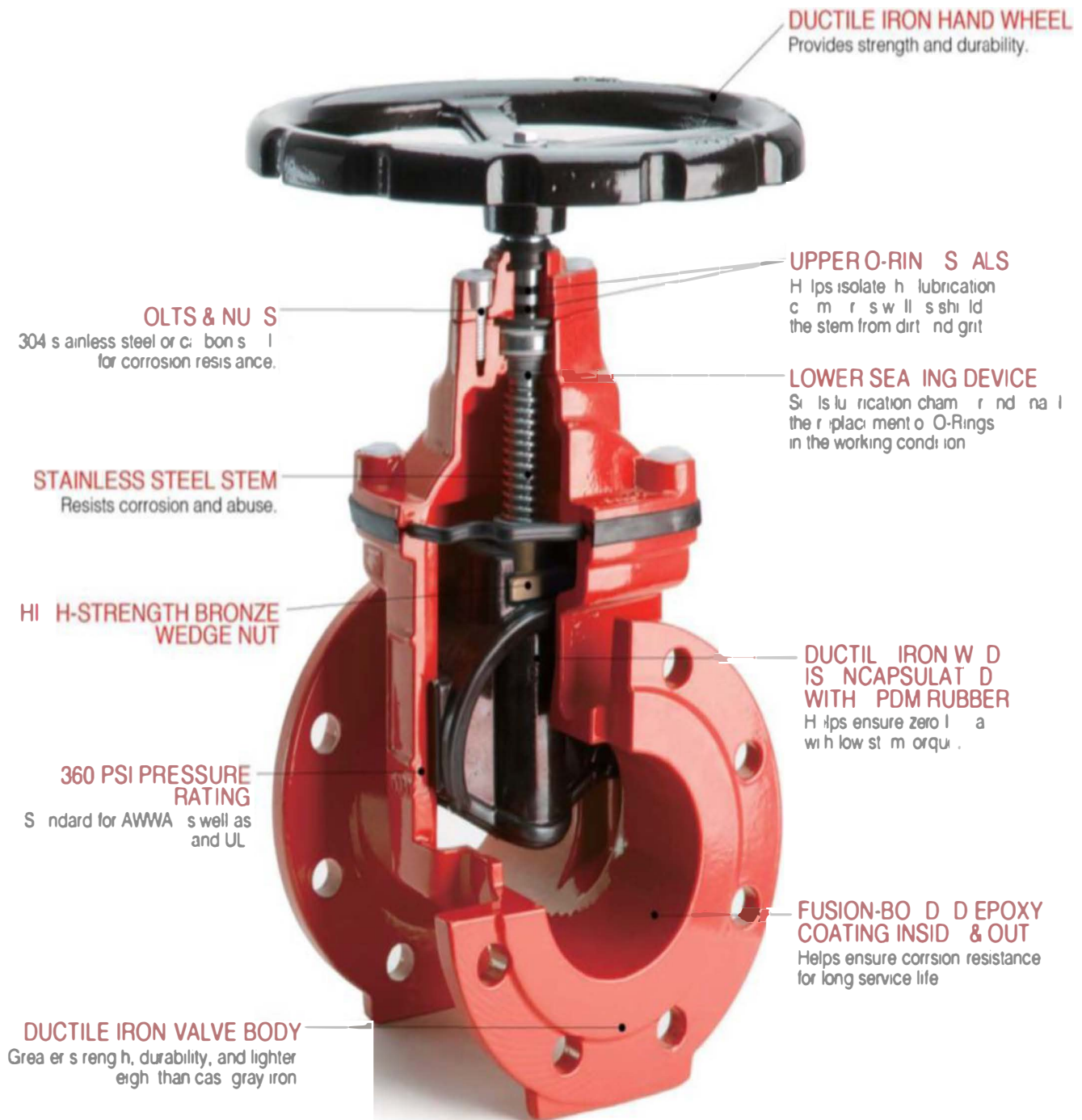
Name of parts	Material
Body	Ductile iron
Wedg	Ductile iron+EPDM
Stem nut	Bronze
Stem	SS431 or SS304, SS316, bronze
Bonnet	Ductile iron
Bonnet Gasket	EPDM
Sealing Ring	EPDM
Upper cover	Ductile iron
Sliding disc	Bronze
Screw	Carbon steel with hot galvanization
O-rings	EPDM
Handwheel	Ductile iron



Technical data >

- Sizes: DN50~DN300
- Working pressure: P: 16/PN25
- Valve standard: EN1171
- Flange standard: EN1092-2
- Temperature range: 0 ~ 80 °C

Dimensions		Pressure rating		Size (mm)			
DN	inch	PN	ØD	L	H1	H	Ød
50	2	16	165	150	256	338.5	203
		25					
65	2.5	16	185	170	256	348.5	203
		25					
80	3	16	200	180	273.5	373.5	203
		25					
100	4	16	220	190	323.5	433.5	300
		25	235			441	
125	5	16	250	200	376	501	300
		25	270			511	
150	6	16	285	210	423.5	566	300
		25	300			573.5	
200	8	16	340	230	530.5	700.5	406
		25	360			710.5	
250	10	16	400	250	645	845	406
		25	425			857.5	
300	12	16	455	270	725.5	953	406
		25	485			953	



XMx / XMA / XMP



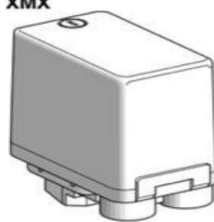
SQUARE D



Telemecanique

Pressure switches
Pressostats
Druckwaechter
Pressostatos
Pressostati
Pressostatos

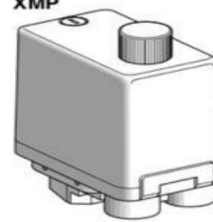
XMx



XMA

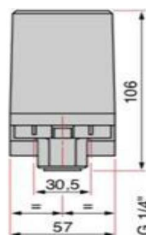
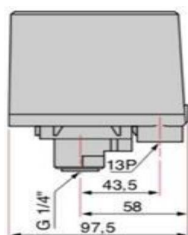


XMP

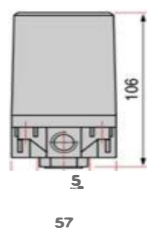
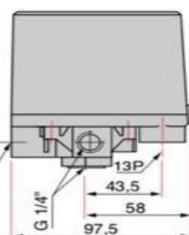


Dimensions - Encombrements - Abmessungen - Dimensiones - Dimensioni - Atravancamentos

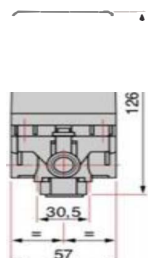
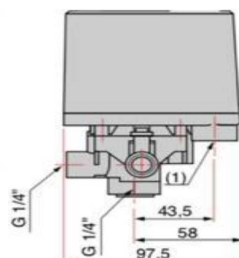
XMx/XMP-A06-21-11/A12-21-11



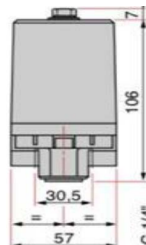
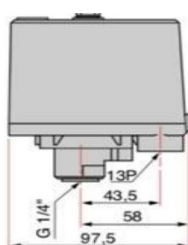
XMx/XMP-A06-24-11/A12-24-11



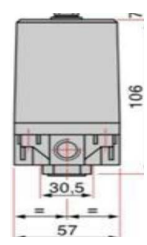
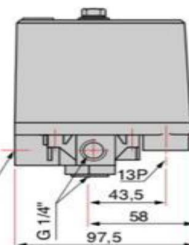
XMx/XMP-A25-21-11



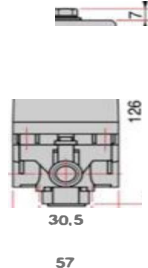
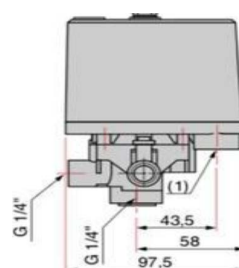
XMA-06-21-11/XMA-12-21-11



XMA-06-24-11/XMA-12-24-11



XMA-25-21-11



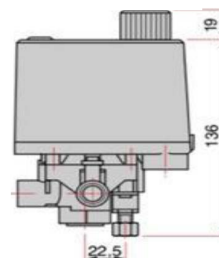
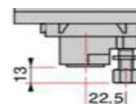
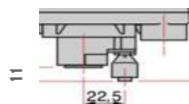
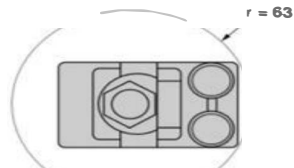
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XMP-D/E06/12-11-11-11-11-11

XMP-R06/12-11-11-11-11-11

XMP-R25-11-11-11-11-11

XMx/XMA/XMP



W9156049801

MIT detection Tome 1 / Chap. 2 / p 13

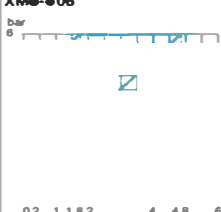
06/99

XMx / XMA / XMP

 SQUARE D

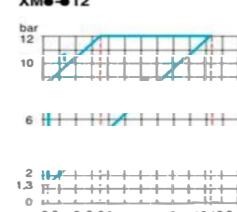
 Telemecanique

XM-e06



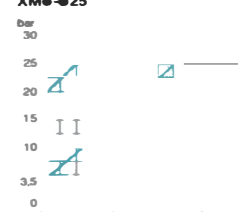
0.2 1 1.8 2 4 4.8 6 bar

XM-e12



0.3 2 3.6 4 8 10 10.3 bar

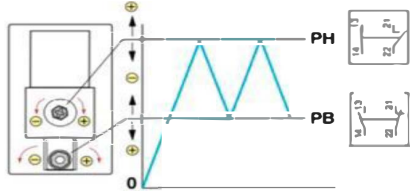
XM-e25



0.1 5 10 15 20.5 25 30 bar

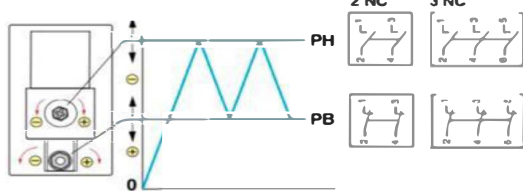
1 : Maximum differential - Ecart max - Maximal hysteresen - Intervalos maximos - Differenziali max - intervalos maximos
2 : Minimum differential - Ecart min - Minimale hysteresen - Intervalos minimos - Differenziali min - intervalos minimos

XMx/XMA



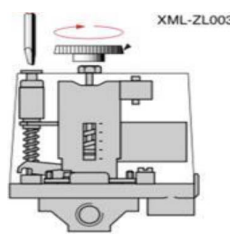
PH : High setting point - Point haut - Oberer Schallpunkt - Punto de disparo superior - Punto di scatto superiore - Ponto alto
PB : Low setting point - Point bas - Unterer Schallpunkt - Punto de disparo inferior - Punto di scatto inferiore - Ponto baixo

XMP



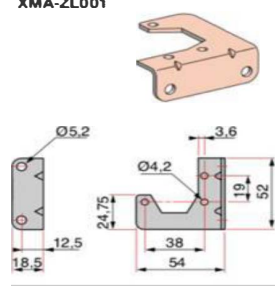
2 NC 3 NC

Setting
Réglage
Einsellungen
Adjustes
Regolazione
Reglagem



XML-ZL003

Fixing bracket
Equerre de fixation
Befestigungswinkel
Escuadra de fijación
Squadra de fissaggio
Esquadro de fixação



XMA-ZL001

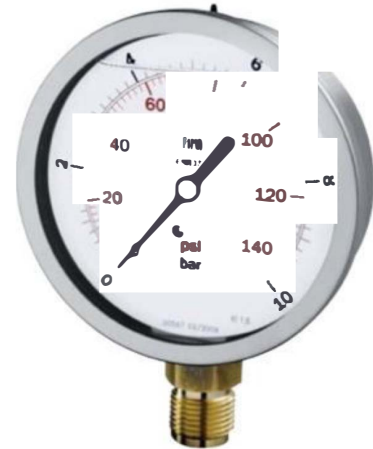
 **DANGER / PELIGRO / DANGER**

HAZARDOUS VOLTAGE	TENSION PELIGROSA	TENSION DANGEREUSE
Disconnect all power before servicing equipment.	Desenergice el equipo antes de realizarle servicio.	Couper l'alimentation avant de travailler sur cet appareil.
Electric shock will result in death or serious injury.	Una descarga eléctrica podrá causar la muerte o lesiones serias.	Une électrocution entraînera la mort ou des blessures graves.

bourdon tube pressure gauges
anti-vibration version
DS 4" (100mm)



PED 2014/68/E



In truments de igned for u e on power units, pump, hydro- leaning machine pre e , engine compre sors, turbines, die el engines, chemi al, petrochemical and refrigerating plant and on machine and equipment where pul ating pre ure: or mechanical vibration are apparent. They can be u ed with ga eou or liquid media whi h do not orrode copper alloy and whi h do not have high vis oxity or do not cristalize.

1.04.2 - Ffillable Model

De ign: EN 837-1.

afety de ignation: SI a per EN 837-2.

Range : from 0...15 to 0...15000 PSI (from 0...1 to 0...1010 bar or other equivalent unit).

Accuracy cla : 1,6 as per E 837-1.

Ambient temperature: -13...+149°F (-25...+65 °C).

Proces fluid temperature: +212°F (max +100 °C).

Thermal drift: max ±0,4%/10 of ranges (starting from 68°F-21).

Working pres ure:

75% of F V for tat' pres ure;

66% of F V for pul ating pres ure.

Overpres ure (max 15 min):

of ranges ≤ 1500 psi (100 bar);

15% of FSV for range over 1500 psi (100 bar).

Protection degree: IP 67 a per IE 529.

ocket material: copper alloy, with internal restrictor ø 0.03" (0,8 mm)

Bourdon tube:

copper alloy for range ≤ 10000 psi (600 bar);

AISI 316L st.st. for range 15000 psi (1000 bar).

a e: tainle steel.

Ring: stainle steel, crimped.

Window: tempered gla .

Movement: copper and tainle s steel.

Dial: aluminium, white with black markings

Pointer: not adjustable, aluminium, black

1.04.3 - Filled Model

Damping liquid: glycerine 98%, silicon oil.

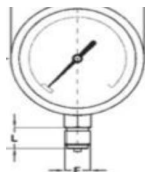
Ambient temper ture:

+32...+149 °F (0...+65 °C) with glycerine filling;

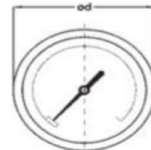
-40...+149 °F (-40...+65 °) with ilicon oil filling.

Proces fluid temperature: max+149°F (+65°) .

Other featur : a Ffillable Model.



Technical drawing of a mechanical part, likely a valve or actuator, showing dimensions b , a , ch , od , F , and L .



www.elsevier.com

[illegible]

12

AT

TO MAKE ALL THE MODIFICATIONS THAT

THE 2M

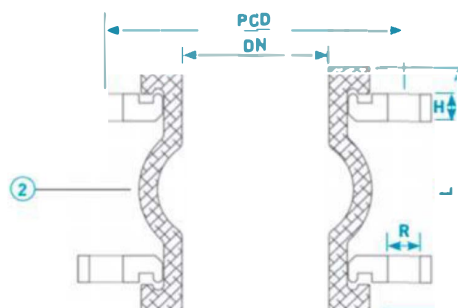
VA FOMA RESEARCH

SINGLE-SPHERE FLANGED RUBBER EXPANSION JOINT

COMPLY WITH BS4504:SECTION3.2:1989

FLUID & APPLICATION:

Air, Compressed Air, Pure Water and Sea Water.



CROSS SECTIONAL VIEW

STANDARD SPECIFICATIONS

Nominal Pressure	PN16
Scaling Test Pressure	1.76Mpa
Strength Test Pressure	2.4Mpa
Operating Temperature	-15~+115°C

COMPONENT PARTS

ITEM	PARTS	MATERIAL
1	Flanges	Galvanized Iron
2	Elastomer	Nitrile Rubber

DIMENSIONS

STOCK CODE	SIZE (mm)	L (mm)	H (mm)	NOs OF HOLES	R (mm)	PCD (mm)	WEIGHT (kg)
FEJ42	40	95	16	4	18	110	2.20
FEJ50	50	105	18	4	18	125	3.10
FEJ65	65	115	18	4	18	145	4.20
FEJ80	80	135	20	8	18	160	5.00
FEJ100	100	150	20	8	18	180	6.20
FEJ125	125	165	22	8	18	210	9.10
FEJ150	150	180	22	8	23	240	11.20
FEJ200	200	210	24	12	23	295	15.80
FEJ250	250	230	26	12	27	355	21.30
FEJ300	300	245	26	12	27	410	25.50

Scope of the Line: Globe Style Check Valve –

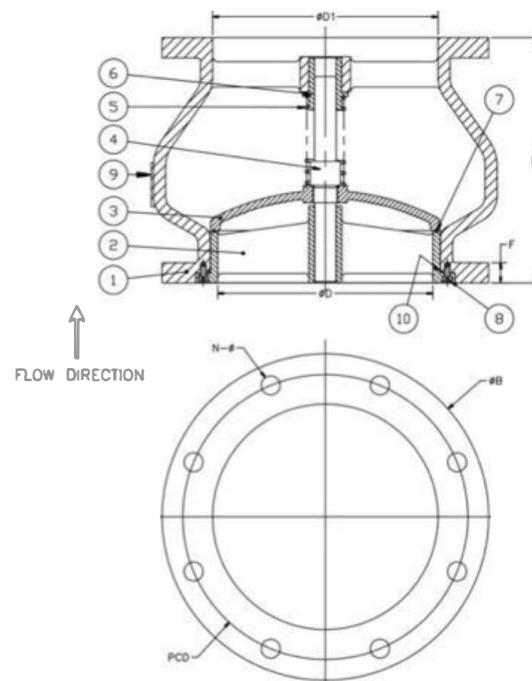
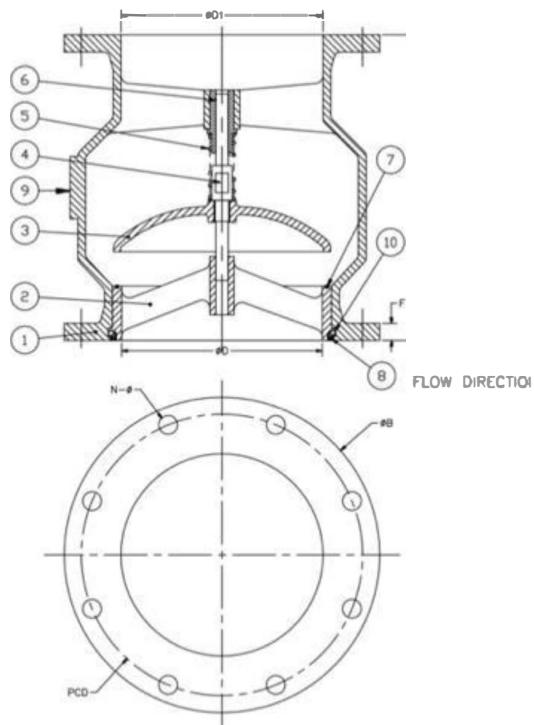


Body:	Ductile Iron ASTM A-536 Gr 65-45-12
Disc:	304 Stainless Steel
Seat:	304 Stainless Steel/EPDM
Spring:	316 Stainless Steel (2" - 16") 304 Stainless Steel (18" - 24")
Rating:	250 psi
Flanges:	ASME B16.1 CL.125
Coating:	Fusion Bonded Epoxy (interior and exterior)
Availability:	2" thru 24"

Globe Style Check Valve: Technical Specifications

Check valve shall be of the silent operating type and the same size as the entering pipe. Globe style shall be rated for 250PSI service, have a Ductile Iron body (ASTM A-536 65-45-12), 125# ANSI Flat Face Flanges, ASTM A313 Type 304 Stainless Steel helical or conical spring, a Stainless Steel (ASTM type 304) seat and dual guided disc (top and bottom), 304 Stainless Steel guide bushing and type 304 Stainless Steel guide pins. Check valve to have a minimum open area in the body of 110% of the area of the entering or corresponding pipe. Valve is to operate silently in either vertical or horizontal positions, flow up or down. Globe style check valve shall be Pra Series 821G as manufactured by Henry Pratt Company.

Globe Style Check Valve – ٢



2" - 12"

Size	L	eD	eD1	F	eB	PCD	N-e	Weight (lbs)
2"	5.24	2.20	2.36	0.63	6.00	4.75	4-0.75	16.50
2.5"	5.50	2.87	2.95	0.69	7.00	5.50	4-0.75	20.00
3"	6.00	3.35	3.54	0.75	7.52	6.00	4-0.75	26.50
4"	7.25	4.17	4.33	0.75	9.00	7.50	8-0.75	35.50
6"	9.75	6.06	6.30	0.75	11.00	9.50	8-0.875	64.00
8"	12.50	8.19	8.11	0.79	13.50	11.75	8-0.875	128.00
10"	15.50	10.16	10.23	0.87	16.00	14.25	12-1	174.50
12"	14.25	12.13	12.2	0.98	19.00	17.00	12-1	249.50

Valve Size	Max. Allowable ID of Fig	STD Ring Gasket Dimensions	
		Gasket I.D.	OD for 125 lb Globe Type
2"	5.24	2.20	2.36
2.5"	5.50	2.87	2.95
3"	6.00	3.35	3.54
4"	7.25	4.17	4.33
6"	9.75	6.06	6.30
8"	12.50	8.19	8.11
10"	15.50	10.16	10.23
12"	14.25	12.13	12.2

* Gasket supplied by others